

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently amended) A method for increasing the proliferation of non-xenogeneic thymocytes in a non-human animal comprising:

altering an endogenous gene encoding p27<sup>Kip1</sup> in an isolated thymocyte, or an isolated hematopoietic cell that differentiates into a thymocyte, of the animal to cause a functional deficiency of cyclin-dependent kinase inhibitor function of p27<sup>Kip1</sup>,

introducing the altered cells having the functional deficiency of cyclin-dependent kinase inhibitor function of p27<sup>Kip1</sup> to the animal thereby increasing the proliferation of thymocytes in the animal, and

monitoring the animal to detect the increase in thymocyte proliferation, wherein said monitoring comprises obtaining from the animal a sample of hematopoietic cells and positively identifying a subpopulation thereof as thymocytes.

2. (Previously presented) The method of claim 1, wherein the hematopoietic cell is a bone marrow cell.

3. (Original) The method of claim 1, wherein the animal is a rodent, pig, sheep, frog, or bovine.

4. (Previously presented) The method of claim 1, wherein the gene encoding p27<sup>Kip1</sup> is altered by insertion of a positively selectable marker gene, mutation of the gene encoding p27<sup>Kip1</sup>, or deletion of the gene encoding p27<sup>Kip1</sup>.

5. (Previously presented) The method of claim 4, wherein the gene encoding p27<sup>Kip1</sup> is altered by insertion of a positively selectable marker gene into the gene encoding p27<sup>Kip1</sup>.

6. (Previously presented) The method of claim 5, wherein the positively selectable marker gene encodes neomycin resistance, thymidine kinase, adenine phosphoribosyl transferase, hypoxanthine-guanine phosphoribosyl transferase or dihydrofolate reductase.

7. (Previously presented) The method of claim 6, wherein the positively selectable marker gene encodes neomycin resistance.

8. (Previously presented) The method of claim 1, further comprising:  
introducing a plasmid into the isolated cell, wherein the plasmid comprises the gene encoding p27<sup>Kip1</sup> altered by insertion of a positively selectable marker gene.

9. (Previously presented) The method of claim 8, wherein the plasmid further comprises a negatively selectable marker gene adjacent the altered gene encoding p27<sup>Kip1</sup>, whereby the distance between the negatively selectable marker gene and the altered gene encoding p27<sup>Kip1</sup> is sufficient to allow homologous recombination between the altered gene encoding p27<sup>Kip1</sup> and the endogenous gene encoding p27<sup>Kip1</sup> in the cell.

10. (Previously presented) The method of claim 9, wherein the negatively selectable marker gene encodes thymidine kinase.

11. (Original) The method of claim 8, wherein the plasmid is delivered to the cell by electroporation, microinjection or transformation.